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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/590,594	06/09/2000	JAMES J. KOSMACH	PF02072NA	1575

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MOTOROLA INC  
600 NORTH US HIGHWAY 45  
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EXAMINER

CHANG, EDITH M

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 08/14/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

09/590,594

Applicant(s)

KOSMACH ET AL.

Examiner

Edith M Yeh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 8, 13-14, 17, 20, 25 is/are rejected.
- 7) ☒ Claim(s) 3-7, 9-12, 15, 16, 18, 19 and 21-24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 8, 13-14, 17, 20, & 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin (US Patent 6108044) in view of Shin (US Patent 5991341) and Powell et al. (US Patent 6496547 B1).

Regarding **claims 1-2, 13-14, & 17** Shin discloses a receiver (FIG.2 '044) and its method. It comprises: a demodulator to receive a signal to generate a received word, the received word including a plurality of symbols (input 220 FIG.3) and the decoding function in the HDTV/NTSC signal processor (column 3 lines 20-25), however does not specify *the detector* in the demodulator, *the decoder* in the HDTV/NTSC signal processor, and *the two phases* associated by the symbol.

Concerning *the detector*, Powell et al. teaches the detector adapted to demodulate the received signal and generate energy value relating the received symbol (702-750, 752-760 FIG.7). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the detector taught by Powell et al. in Shin's demodulator to eliminated clicks (column 13 lines 22-25).

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Concerning to *the two phases* the symbol associate with, Shin ('341) teaches the data associated with a first phase ( $I_1/O_1$  FIG.6A) and data associated with a second phase ( $I_2/O_2$   $O_3$  FIG.6A) in the TCM decoder. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the TCM decoder taught by Shin ('341) in Shin's ('044) signal processor to implement the HDTV/NTSC decoding function wherein the demodulated symbol containing data associated with a first phase and data associated with a second phase by using simple hardware (column 3 lines 8-15 '341).

Concerning to *the decoder*, further Shin ('341) teaches a decoder (230 FIG.9, column 7 lines 49-58) adapted to generate a first set of bit metrics, based on the energy values in response to the receiver being assigned to the first phase and a second set of bit metrics based on the energy values in response to the receiver being assigned to the second phase (FIG.7), the decoder being further adapted to identify the least reliable bits in the received word based on one of the first and second sets of bit metrics wherein the Viterbi decoder (230 FIG.9) attempt to choose the candidate metrics/words (which are based on the received word and the least reliable bits) so that the decoder output is closest to the encoder input, and in turn it identifies the least reliable bits in the received word. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the decoder taught by Shin ('341) in Shin's receiver (044) to implement the decoding function in the processor by using simple hardware (column 3 lines 8-15 '341).

Regarding **claims 8 & 20**, Powell et al. teaches a discriminator detector adapted to generate an output energy and compare it to the potential symbol energy thresholds (FIG.7). At

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the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the detector taught by Powell et al. to eliminated clicks (column 13 lines 22-25).

Regarding **claim 25**, Shin discloses a receiver (FIG.2 '044) comprising: means for demodulating a received signal to generate a received word, the received word including a plurality of symbols (input 220 FIG.3), and the decoding function in the HDTV/NTSC signal processor (column 3 lines 20-25), however does not specify *the means* of detector in the demodulator *for generating energy* values relating each symbol, *the two phases* associated by the symbol; *the means* of decoder in the HDTV/NTSC signal processor *for generating bit metrics* based on the energy values; and *means for designating* the least reliable bits.

Concerning to *the means for generating energy values*, Powell et al. teaches the detector adapted to demodulate the received signal and generate energy value relating the received symbol (702-750, 752-760 FIG.7). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the detector taught by Powell et al. in Shin's demodulator (means for demodulating) to eliminated clicks (column 13 lines 22-25).

Concerning to *the two phases* the symbol associate with, Shin ('341) teaches the data associated with a first phase ( $I_1/O_1$  FIG.6A) and data associated with a second phase ( $I_2/O_2$   $O_3$  FIG.6A) in the TCM decoder. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the TCM decoder taught by Shin ('341) in Shin's ('044) signal processor to implement the HDTV/NTSC decoding function wherein the demodulated symbol containing data associated with a first phase and data associated with a second phase by using simple hardware (column 3 lines 8-15 '341).

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Concerning to *the means for generating bit metrics and for designating* the least reliable bits, further Shin ('341) teaches a decoder (230 FIG.9, column 7 lines 49-58) adapted to generate a first set of bit metrics, based on the energy values in response to the receiver being assigned to the first phase and a second set of bit metrics based on the energy values in response to the receiver being assigned to the second phase (FIG.7), the decoder being further adapted to identify the least reliable bits in the received word based on one of the first and second sets of bit metrics wherein the Viterbi decoder (230) attempt to choose the candidate metrics/words (which are based on the received word and the least reliable bits) so that the decoder output is closest to the encoder input, and in turn it identifies the least reliable bits in the received word. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the decoder taught by Shin ('341) in Shin's receiver (044) to implement the decoding function in the processor by using simple hardware (column 3 lines 8-15 '341).

#### ***Allowable Subject Matter***

3. Claims 3-7, 9-12, 15-16, 18-19, 21-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Yeh whose telephone number is 703-305-3416. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4800.

Edith Yeh  
July 30, 2003



**STEPHEN CHIN**  
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